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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,170	06/25/2001	Yuuki Matsumura	SONYJP-130	9790

530                      7590                      09/19/2005  
LERNER, DAVID, LITTENBERG,  
KRUMHOLZ & MENTLIK  
600 SOUTH AVENUE WEST  
WESTFIELD, NJ 07090

EXAMINER
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SIMITOSKI, MICHAEL J

ART UNIT	PAPER NUMBER
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2134

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/869,170	MATSUMURA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael J. Simitoski	2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2005.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-8,10-13 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8,10-13 and 15 is/are rejected.
- 7) ☒ Claim(s) 1-3,5-8,10-13 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

*ET*

### **DETAILED ACTION**

1. The response of 7/8/2005 was received and considered.
2. Claims 1-3, 5-8, 10-13 & 15 are pending.

### ***Response to Arguments***

3. In light of Applicant's response (amendments to the claims), the objections to the title and claims 4 & 6-10 and the rejections of claims 1-15 under 35 U.S.C. §112, ¶2, as set forth in the previous Office Action, are withdrawn.

Applicant's arguments filed 7/8/2005 have been fully considered but they are not persuasive. Applicant's response (p. 10, ¶1-2) argues that neither Swanson nor Kundar disclose "psychological auditory sense encoded information" as recited by Applicants. However, Swanson discloses multiple watermarks, at least a first resulting from analysis of an audio signal which will be subjected to compression so as to gain the maximum effect from the watermark (p. 3, ¶1). The watermark is created by analyzing the audio signal to determine psychological auditory sense information (what a human will perceptibly notice) (p. 2, last ¶) that will be used to form the watermark to the audio signal for maximum effect (examining at what time/temporal, frequency and amplitude/strength to embed the watermark in the audio signal, p. 3, ¶1). Swanson also discloses that the watermark is robust, meaning that upon compression, the watermark is still detectable and recoverable (p. 2, 1<sup>st</sup> full ¶). While Swanson discloses a second watermark (p. 15, §6.5), the reference lacks specifically the second watermark being a fragile watermark. However, Kundur teaches that the goal of fragile watermarking is to embed a watermark in a host signal such that any changes applied to the signal will be indicated by the

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mark (§2) to detect tampering. Therefore, one of ordinary skill in the art at the time the invention was made would have appreciated the obvious benefits of using the invention to embed a second, specifically fragile, watermark (one that is not completely or substantially recoverable upon compression). Performing such a modification would allow the recipient of the marked signal to detect tampering of any kind of the signal, as taught by Kundur (§1-2).

### *Claim Objections*

4. Claims 1-3 & 5 are objected to because of the following informalities:

Regarding claim 1, “said device comprises” (line 3) should be replaced with “said device comprising”.

Regarding claims 1, 6 & 11, “said second watermarking information can not be” should be replaced with “said second digital watermarking information cannot be”.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-3, 5-8, 10-13 & 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the

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relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not describe predicting the effect of a compression.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3, 5-8, 10-13 & 15, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over “Robust audio watermarking using perceptual masking” by Swanson et al. (**Swanson**), in view of “Towards a Telltale Watermarking Technique for Tamper-Proofing” by Kundur et al. (**Kundur**).

Regarding claims 1, 6 & 11, Swanson discloses performing psychological auditory sense analysis/spectral shaping (p. 3, ¶1 & p. 10, §4) to predict the effect of performing a predetermined compression process (i.e. mpeg encoding) on said audio signal (p. 3, ¶1 & p. 6, ¶2) and outputting the result of the analysis as psychological auditory sense encoded information (p. 10, #1-3) and superimposing on said audio signal first digital watermarking information/watermarking on said input signal (p. 10, #7) on the basis of said psychological auditory sense encoded information/power spectrum, frequency masking (p. 10, #1-7 & p. 3, ¶1), characterized in that, upon compression of said marked signal to create a compressed signal (p. 15, §6.4), said first digital watermarking information/robust watermark can be completely or substantially recovered from said compressed signal (p. 15, §6.4), wherein said psychological

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auditory sense encoded information includes the respective frequency bands of said audio signal on which said first watermarking information is to be superimposed (temporal masking properties of the audio) (p. 2, last ¶) and the respective levels to which the first digital watermarking information should be set prior to superimposition (amplitude increases or decreases with the audio) (p. 3, ¶1). While Swanson discloses multiple watermarks (p. 15, §6.5), Swanson lacks a explicitly a second watermark characterized in that upon compression of said marked signal, said second watermarking information cannot be completely or substantially recovered from said compressed signal. However, Kundur teaches that the goal of fragile watermarking is to embed a watermark in a host signal such that any changes applied to the signal will be indicated by the mark (§2) to detect tampering. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to embed digital watermarking information that has small compression resistance toward said compression processing on said input signal. One of ordinary skill in the art would have been motivated to perform such a modification to detect tampering of the signal, as taught by Kundur (§1-2).

Regarding claims 2, 7 & 12, Swanson discloses the psychological auditory sense analysis information being generated based on a predetermined minimum level of audio signal that can be detected by the auditory sense of a human being (Human auditory system, HAS) (p. 2, last ¶ - p. 3, ¶1, p. 5, §3.1 & p. 10, #2).

Regarding claims 3, 8 & 13, Swanson discloses the psychological auditory sense analysis information being generated on the basis of the masking effect of the audio signal (p. 10, #1 & p. 3, ¶1).

Regarding claims 5, 10 & 15, Swanson discloses embedding copyright information relevant to the input signal (p. 1, ¶1).

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Simitoski whose telephone number is (571) 272-3841. The examiner can normally be reached on Monday - Thursday, 6:45 a.m. - 4:15 p.m.. The examiner can also be reached on alternate Fridays from 6:45 a.m. – 3:15 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse can be reached at (571) 272-3838.

**Any response to this action should be mailed to:**  
Commissioner for Patents

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P.O. Box 1450  
Alexandria, VA 22313-1450

**Or faxed to:**

(571) 273-8300  
(for formal communications intended for entry)

**Or:**

(571) 273-3841 (Examiner's fax, for informal or draft communications, please label "PROPOSED" or "DRAFT")


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MJS

September 12, 2005



GREGORY MORSE  
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